

Feed the Future Innovation Lab For *Collaborative Research on Nutrition* - Africa Gulu University – Annual Report - Year 4

Feed the Future Innovation Lab

For Collaborative Research on Global Nutrition

Annual Report
Gulu University
Year 4 (2013-2014)
Feed the Future Nutrition Innovation Lab-Africa

**UPDATE ON PROGRESS WITH PRENAPS AND POSTNAPS STUDIES
IN GULU NORTHERN UGANDA**

Management Entity Information

GULU UNIVERSITY

PO BOX 166
GULU
UGANDA
EAST AFRICA

Technical and/or Advisory Committee Information

1. MR. BARNABAS K. NATAMBA

PROJECT (S) RESPONSIBLE INVESTIGATOR

PhD CANDIDATE

DIVISION OF NUTRITIONAL SCIENCES

CORNELL UNIVERSITY

&

DEPARTMENT OF PUBLIC HEALTH

GULU UNIVERSITY

PO BOX 166

GULU

UGANDA

EAST AFRICA

2. MR. VINCENT M. OKOTH-OGOLA

UNIVERSITY SECRETARY

GULU UNIVERSITY

3. PROFESSOR NYEKO PEN-MOGI

VICE CHANCELLOR

GULU UNIVERSITY

Map or List of Countries Where Work

GULU: NORTHERN UGANDA



List of Program Partners¹

Gulu Regional Referral Hospital

Acronyms

PreNAPs Prenatal Nutrition And Psychosocial Health Outcomes study

PostNAPs Postnatal Nutrition And Psychosocial Health Outcomes study

¹ US universities and international partners by country

Table of Contents

Management Entity Information.....2

Technical and/or Advisory Committee Information.....2

Map or List of Countries Where Work.....3

List of Program Partners.....4

Acronyms.....4

Executive Summary.....6

Program Activities and Highlights.....6

Key Accomplishments.....6

Research Program Overview and Structure.....6

The PreNAPs Study Project Report.....7

The PostNAPs Study Project Report.....8

Appendices.....10



I) Executive Summary

We would like to provide a quick update on the progress implementing our two projects supported by the Nutrition Innovation Laboratory for Africa (NILA). We started the PreNAPs study with the intention to collect pregnancy data on HIV-infected and non-infected pregnant women. We later requested an amendment to extend the study for approximately one year to collect additional data on lactating mothers and their babies. The PostNAPs study, therefore, was conceived as an extension of the PreNAPs study. A number of activities have taken place in the last year including: completion of data collection for the PreNAPs study and the ending of participant recruitment for the PostNAPs study; publication of our first paper and submission of our second paper from the PreNAPs study. Currently, data collection for the PostNAPs study is still ongoing and is anticipated to end in January 2015. In the following sections, we will highlight key accomplishments and highlights for each of these two studies: overall and then separately.

II) Program Activities and Highlights²

Over the year ending September 30, 2014 we have been able to continue to collect data for the postnatal component of the studies in Gulu. On March 19, 2014, we completed data collection for the PreNAPs study and have achieved 246 mother/infant dyads enrollment in the PostNAPs study. The PreNAPs study ended after generating 1756 observations from 403 pregnant women. We submitted our first manuscript from the PreNAPs study in December 2013. The publication was accepted in June 2014. In May 2014, we submitted our second manuscript and are currently revising that paper following reviewers' suggestions.

III) Key Accomplishments³

- a) Completed data collection for the PreNAPs study in March 2014.
- b) Completed enrollment of participants into the PostNAPs study in March 2014.
- c) Worked with Tufts University to secure an associate award/funding to examine the influence of aflatoxin exposure on maternal and infant growth.
- d) Our first manuscript was accepted in June 2014.
- e) Sent two of our research assistants for further training to the Bangalore Boston Nutrition Collaborative (BBNC) 2014.
- f) Presented our findings at two scientific meetings: 1) Africa Region Chapter of World Psychiatric Association In Kampala, Uganda; and 2) Federation of American Societies of Experimental Biology meeting in San Diego, California.

² Summary of program activities for the year, no more than one page in length.

³ Concise statement of achievements, limited to one page in length which focuses on outputs, not process, such as Feed the Future indicators and the distillation of program achievements across all program activities. Reporting on numbers of project meetings is not an output.

IV) Research Program Overview and Structure

- a) Our program is led by a management committee that involves the Responsible Investigator (Barnabas Natamba); the University Secretary (Vincent Okoth-Ogola); and the Vice Chancellor (Professor Nyeko Pen-Mogi). Barnabas Natamba is the overall study manager and directs all study activities in Gulu. Seven (7) research assistants including a study manager, sub-study coordinators, cognitive development testers, a home visitor, and laboratory assistant work on the project.
- b) Our research activities are closely coordinated with Gulu Regional Referral Hospital who provides us with space and access to research subjects.
- c) Previously, we carried out our institutional review board (IRB) approvals with Gulu University's IRB committee but recently, this role has been taken over by St. Mary's Hospital at Lacor also based in Gulu Town.
- d) On a daily basis we see on average four to six research participants.

V) Research Project Reports⁴

a) Theme A

i) Project I

(1) Name: The PreNAPs Study

(2) Description

The Prenatal Nutrition and Psychosocial Health Outcomes (PreNAPs) study is a two-year collaboration between Gulu, Cornell and Tufts Universities. The PreNAPs study's primary goals are: (a) to determine the differential impacts of food insecurity on gestational weight gain and prenatal depression in HIV-infected and non-infected pregnant women in Gulu, Northern Uganda; and (b) to clarify the mechanisms underlying the relationship between food insufficiency and/or insecurity and women's weight gain and/or depression. The PreNAPs study began enrolling pregnant women on October 10, 2012. The PreNAPs study completed participant recruitment on August 29, 2013 with more than 400 pregnant women enrolled. Data collection for the PreNAPs study ended on March 19, 2014.

(3) Collaborators⁵

Mr. Barnabas Natamba, a doctoral candidate at Cornell University's Division of Nutritional Sciences, is the Principal Investigator and overall coordinator of the PreNAPs study. For his PhD Studies at Cornell, Mr. Natamba is advised by Dr. Sera

⁴ Summaries of project activities, highlights and outcomes, not scientific reports or long detailed research papers, no more than one page per project.

⁵ Provide institutional affiliation and country.

Young, PhD, a research scientist at Cornell University's Ithaca Campus and co-chair of Mr. Natamba's doctoral dissertation committee.

(4) Achievements

- (a) Robust enrollment numbers of 403 pregnant participants.
- (b) Robust follow-up data, on average we collected four follow-up observations per woman.
- (c) Was able to develop a concept and obtain funding for the postnatal portion of the study.
- (d) Recruited and managed 10+ research assistants to work on the project.

(5) Capacity Building

- (a) The bulk of the data from the PreNAPs study will be used in Barnabas Natamba's doctoral dissertation.
- (b) We have trained local staff in study management, data collection, database design, and data entry.

(6) Lessons Learned

- (a) Establish strong linkages with local institutions, e.g. the Gulu Regional Referral Hospital, from where the study was implemented.
- (b) Develop strong links with supporting institution's staff which have direct or indirect relations with the project, e.g. nurses at antenatal and maternity wards, laboratory staff at the hospital clinical laboratory.

(7) Publications

- (a) **Natamba BK**, Kilama H, Arbach A, Achan J, Griffiths JK, Young SL. "Reliability and validity of an individually-focused food insecurity access scale for assessing inadequate access to food among pregnant Ugandan women of mixed HIV status." *Public Health Nutrition* 2014 Aug;;1–11.

(8) Oral Conference Presentations

- (a) **Natamba, BK**, Achan, J, Oyok, T, Mou, S, Gosh, S, Stoltzfus, R, ... & Young, S (2014, April). Maternal food insecurity, anemia, and social support are independently associated with prenatal depression among HIV-positive and HIV-negative women attending antenatal services in northern Uganda. *The FASEB Journal*, 28 (1 Supplement), 268-2.

ii) Project 2

- (1) **Name: The PostNAPs study.**

(2) Description

The Postnatal Nutrition and Psychosocial Health Outcomes Study (PostNAPs) is a one-year collaboration between investigators at the two Cornell campuses (Weill Cornell Medical College in New York City and Cornell University at the Ithaca Campus). Other collaborators on the PostNAPs study are from Tufts, Columbia, Makerere and Gulu Universities. The PostNAPs study is conceptualized as a continuation of our current PreNAPs study cohort, which ends once pregnant women deliver. Although data collection is ongoing, the PostNAPs study completed enrollment on March 19, 2014 with 246 mother/infant dyads recruited.

(3) Collaborators

Key collaborators on the PostNAPs study include: Dr. Sera Young of Cornell University's Division of Nutritional Sciences; Dr. Nicole Sirotin, previously at Weill Cornell Medical College; Barnabas Natamba, a lecturer at Gulu University's Department of Public Health; and Dr. Elizabeth Widen of Columbia University.

(4) Achievements

- (a) Enrollment of 246 mother/infant dyads.
- (b) Completed collection of human sera on >90% of eligible sample at one month postpartum.
- (c) Integrated postnatal body composition assessments into the project.
- (d) Integrated neurocognitive assessments for infants at six and 12 months of age, and trained two research assistants to carry out these assessments.
- (e) Collaborated with Tufts University to write a concept and secure funding for an associate award from the United States Agency for International Development (USAID) East Africa Mission to investigate the influence of perinatal aflatoxin exposure on changes in maternal and child anthropometry.

(5) Capacity Building

- (a) Further training and support to project staff on data collection, entry and overall project management.
- (b) Supported two project staff (Ms. Winifred Achoko & Ms. Claire Biribawa) to travel to India and take part in the BBNC 2014 program.

(6) Lessons Learned

- (a) There is always a need to manage expectations among investigators, e.g. authorship roles, and for the sharing of project-related intellectual properties early in the project.
- (b) Develop clear criteria for identifying expectations and roles of students interning with the project from the US side.

(7) Publications

- (a) The team is working on submitting PostNAPs project abstracts for the Federations of Experimental Biology Meeting in Boston in March/April 2015. We anticipate to present approximately five papers/abstracts at this conference.

2) APPENDICES

- A. Concept for early childhood development (ECD) sub-study within the Uganda birth cohort
- B. Three-year work plan for the ECD project
- C. Three-year budget estimates and justification for the ECD sub-study